

Rambus Investor Presentation

Q4 2023

A glowing blue square chip with rounded corners and a thin blue border. The word "Rambus" is written in white italicized font in the center. The chip is set against a dark blue background with a complex circuit pattern of glowing blue lines and dots.

Rambus

Safe Harbor for Forward-Looking Statements; Other Disclosures

This presentation contains forward-looking statements, including those relating to the Company's expectations regarding business opportunities, the Company's ability to deliver long-term, profitable growth, industry growth rates, timing of expected product launches, demand for existing and newly-acquired technologies, product and investment strategies, the Company's outlook and financial guidance for recent and upcoming quarters and related drivers, the Company's ability to effectively manage supply chain and other market challenges, and the effects of ASC 606 on reported revenue, among other items.

Such forward-looking statements are based on current expectations, estimates and projections, management's beliefs and certain assumptions. Actual results may differ materially. The Company's business generally is subject to a number of risks which are described more fully in the Company's periodic reports filed with the Securities and Exchange Commission. The Company undertakes no obligation to update forward-looking statements to reflect events or circumstances after the date hereof.

Effective January 1, 2018, the Company adopted Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers in ASC 606. The adoption of ASC 606 materially impacted the timing of revenue recognition for the Company's fixed-fee intellectual property licensing arrangements. The adoption of ASC 606 did not have a material impact on the Company's other revenue streams, net cash provided by operating activities, or its underlying financial position.

This presentation contains non-GAAP financial measures, including cost of product revenue, operating costs and expenses, and interest and other income (expense), net. In computing these non-GAAP financial measures, stock-based compensation expenses, acquisition-related/divestiture costs and retention bonus expense, gain on divestiture, impairment of assets related to divestiture, amortization of acquired intangible assets, expense on abandoned operating leases, facility restoration costs, restructuring and other charges, gain on sale of equity security, provision for (benefit from) income taxes, change in fair value earn-out liability, loss on fair value adjustment of derivatives, loss on extinguishment of debt, non-cash interest expense and certain other one-time adjustments were considered. The non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures calculated in accordance with GAAP, and the financial results calculated in accordance with GAAP and reconciliations from these results should be carefully evaluated. Management believes the non-GAAP financial measures are appropriate for both its own assessment of, and to show investors, how the Company's performance compares to other periods. Reconciliation from GAAP to non-GAAP results are made available and more fully described on our website as well as the back of this deck and in the earnings release.

Rambus
Data • Faster • Safer

Record

2022 Chip and
Silicon IP Revenue

\$230M

2022 Cash from Operations



Industry-Leading
Chips and Silicon IP



Data Center
>75% of Chip and
Silicon IP Revenue

+58%

2022 Product Revenue
Growth

33 Years
Technology Leadership

San Jose HQ
Global Footprint

600 Employees
>70% in Engineering

~2800
Patents and
Patents Pending

Semiconductor Solutions Built on Innovation

Rambus Offerings

Chips



Memory
Interface Chips

Product Sales

Silicon IP



Interface IP



Security IP

IP Licenses

Innovations



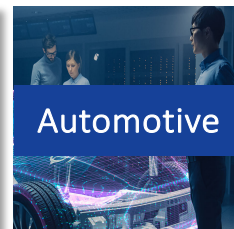
Foundational
R&D and IP

Patent Licenses

Markets Served



Data Center
& Edge



Automotive



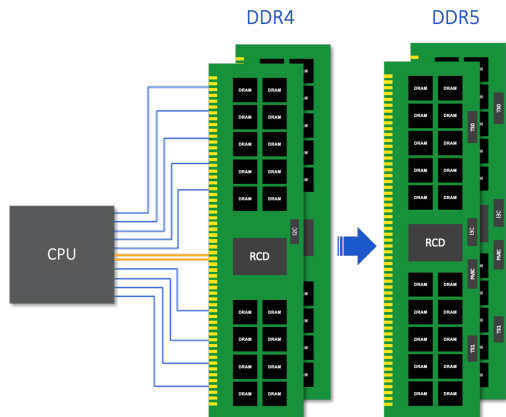
Government



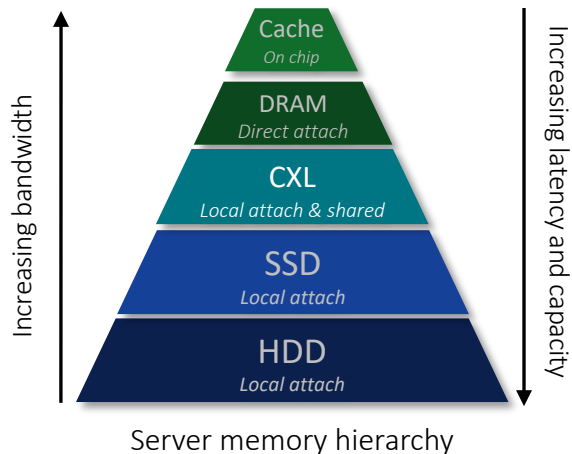
IoT

Amplified Opportunities in Data Center

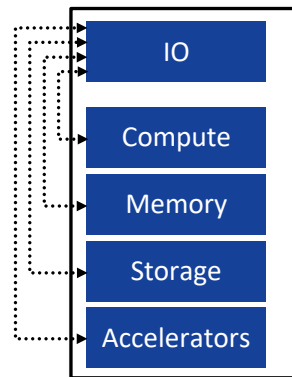
Delivering higher performance with DDR5



Bridging the latency gap with CXL memory tiering



Improving efficiency with composable computing



Composable resources:

- Compute
- Memory
- Storage
- Accelerators
- Shared Boot
- Enhance Security

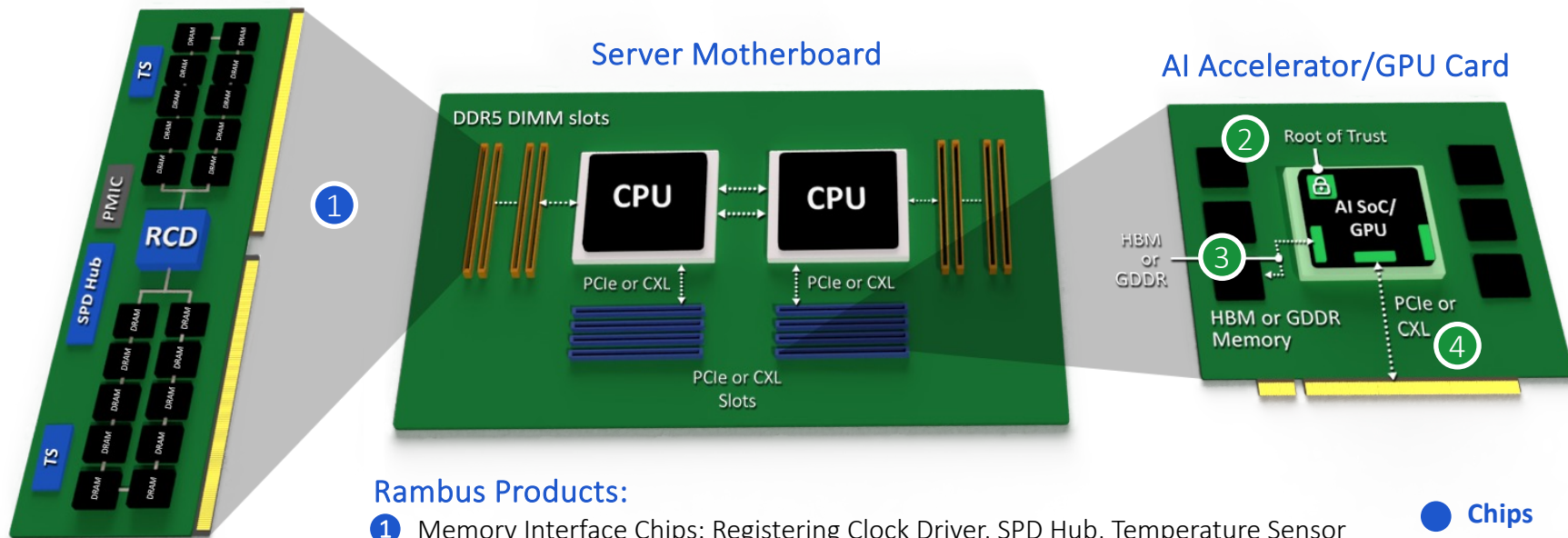
Increasing need for performance, delivered securely and reliably

Rambus Solutions for the Data Center

DDR5 RDIMM

Server Motherboard

AI Accelerator/GPU Card



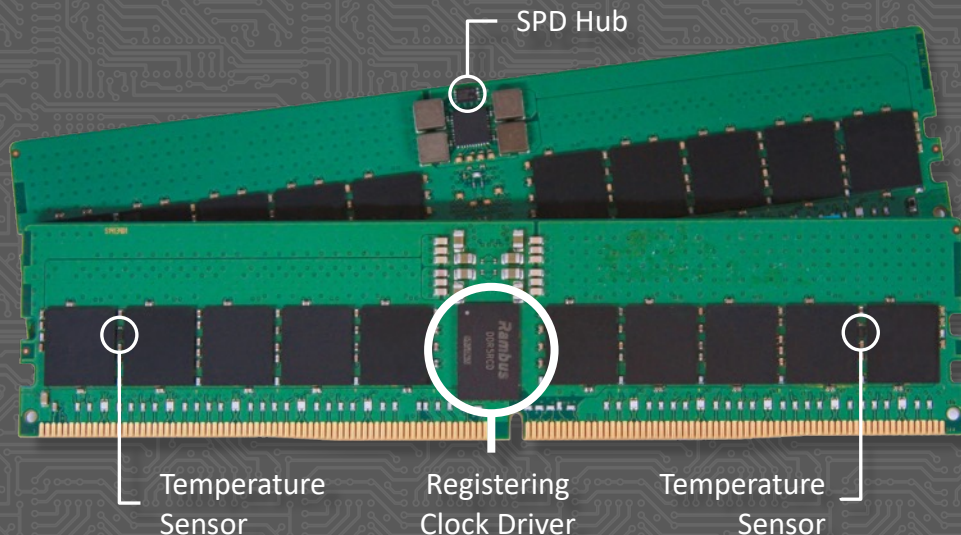
Rambus Products:

- 1 Memory Interface Chips: Registering Clock Driver, SPD Hub, Temperature Sensor
- 2 Root of Trust Security IP with Quantum Safe Cryptography
- 3 HBM/GDDR Memory Controller IP + Inline Memory Encryption Security IP
- 4 PCIe/CXL Controller IP (including Integrity and Data Encryption Security IP)

- Chips
- Silicon IP

Rambus Memory Interface Chips

Driving the pace of server main memory performance



DDR5 Server Chipset

58%

2022 Product Revenue Growth
(~Memory Interface Chips)

Industry-leading DDR5 RCD offering:

- Gen1 RCD 4800 MT/s
- Gen2 RCD 5600 MT/s
- Gen3 RCD 6400 MT/s

Newly expanded DDR5 chip portfolio:

- SPD Hub*
- Temperature Sensor

*SPD Hub supports client UDIMMs and SODIMMs

Rambus Uniquely Positioned for CXL Solutions

Industry Leadership

Industry leading performance to 6400 MT/s for DDR5-based servers

Core Expertise

World-class expertise in memory interface and interconnect subsystems (digital controller and security IP)

Innovation

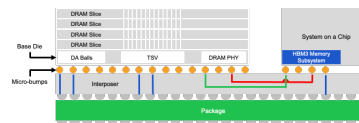
33 years of research and innovation in high-performance memory, high-speed interfaces, and hardware security

Foundation

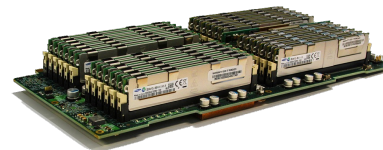
Company founded on mission to drive increased memory bandwidth for greater computing performance



DDR5 Memory Interface Chipset



HBM3 Memory Interface IP



Smart Data Acceleration Engine



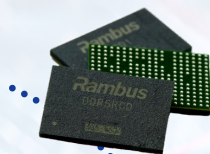
RDRAM Synchronous Memory

Product Leadership Driving Topline Growth

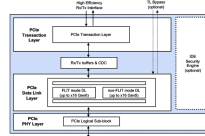
2022 Annual Growth

48%

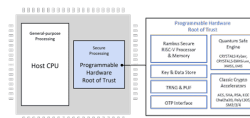
Chip and Silicon IP
combined revenue



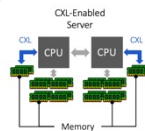
DDR5 and DDR4 memory
interface chipsets delivering
industry-leading performance



PCIe 6/5, CXL 3/2, HBM3/2E,
GDDR6, LPDDR5/4, MIPI and
Video Compression digital IP



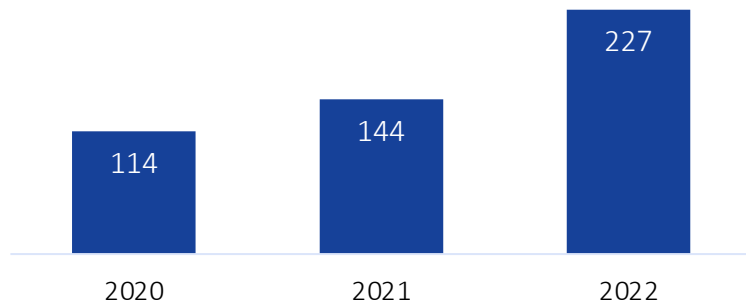
Broadest portfolio of secure
root of trust, protocol engine,
and crypto accelerator cores



Experts in interconnect solutions
critical for performance and utilization
in emerging data center architectures

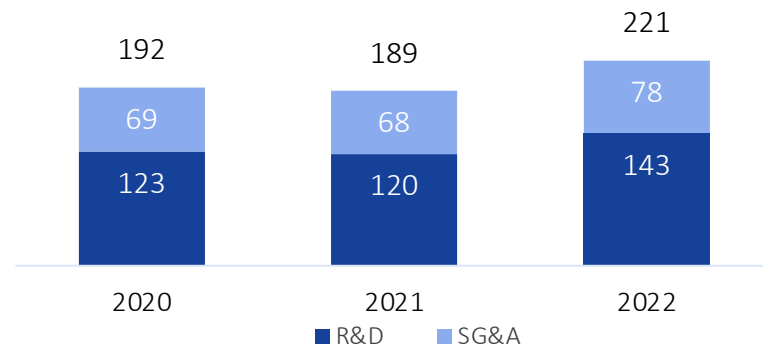
Financial Highlights

Product Revenue* (\$M)

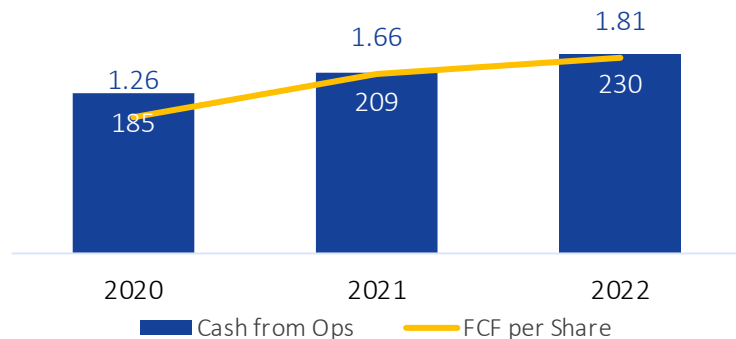


*Consisting Primarily of Memory Interface Chips

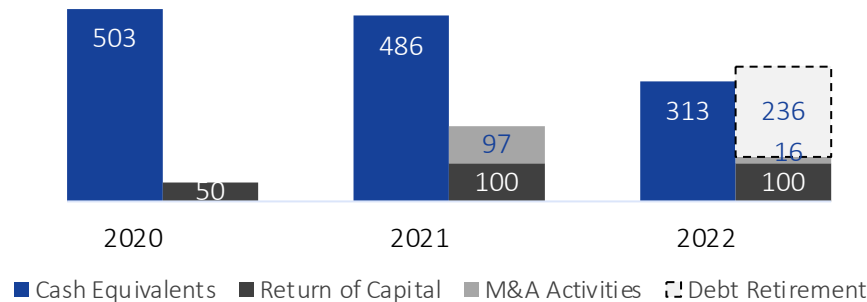
Pro Forma Operating Expenses (\$M)



Cash from Operations (\$M) & FCF per Share (\$)



Cash Equivalents & Return of Capital (\$M)



Rambus Investment Summary



Amplified opportunity in data center as memory relevance accelerates fueled by AI



Pioneer of industry-leading chips and silicon IP enabling critical performance improvements for the continued evolution of the data center



Continued innovation feeds patent portfolio and product roadmap expansion



Focus on strategic initiatives drives financial results and profitable growth



Strong cash generation fuels growth initiatives and return of value to stockholders

Detailed Financials



Strong cash generation fuels growth initiatives
and return of value to stockholders

Outstanding Cash Generation

<i>In Millions</i>	<u>ASC 606</u> Q3 2022	<u>ASC 606</u> Q4 2022	<u>ASC 606</u> Q1 2023	<u>ASC 606</u> Q2 2023	<u>ASC 606</u> Q3 2023	
Revenue	\$112.2	\$122.4	\$113.8	\$119.8	\$105.3	Continued execution and strengthened focus on differentiated portfolio
Total Operating Costs and Expenses ¹	\$77.9	\$85.4	\$86.3	\$75.7	\$72.9	Disciplined investment to support core growth initiatives
Operating Income ¹	\$34.4	\$36.9	\$27.5	\$44.1	\$32.4	Operating results under ASC 606 do not reflect significant cash flows from fixed-fee licensing arrangements
Cash from Operations	\$80.0	\$51.3	\$38.9	\$50.4	\$51.6	Consistent cash generation

¹Please refer to reconciliations of non-GAAP financial measures included in this presentation and in our earnings release

Strong Balance Sheet Supports Strategic Initiatives

<i>In Millions</i>	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	
Total Cash & Marketable Securities	\$264.8	\$313.2	\$292.1	\$332.6	\$375.5	Continued strong cash from operations and consistent capital return (proceeds of \$106M from PHY divestiture offset by \$100M accelerated share repurchase)
Total Assets	\$969.1	\$1,012.6	\$962.6	\$1,127.1	\$1,184.3	Strong balance sheet and debt free \$68M and \$98M contract assets in Q3 2023 and Q2 2023, respectively, related to ASC 606 adoption
Stockholders' Equity	\$749.9	\$779.3	\$761.7	\$945.6	\$955.6	
Cash from Operations	\$80.0	\$51.3	\$38.9	\$50.4	\$51.6	Sustained, predictable cash generation

Reconciliation of Non-GAAP Financial Measures

Net Income (Loss) in Millions	Q3 2022 (ASC 606)	Q4 2022 (ASC 606)	Q1 2023 (ASC 606)	Q2 2023 (ASC 606)	Q3 2023 (ASC 606)
GAAP Net Income	\$1	\$16	\$3	\$169	\$103
Adjustments:					
Stock-based compensation	\$9	\$10	\$13	\$11	\$10
Acquisition-related/divestiture costs and retention bonus expense	\$2	\$1	\$1	\$0	\$0
Amortization of acquired intangible assets	\$4	\$4	\$4	\$4	\$4
Expense on abandoned operating leases	\$1	\$1	\$1	\$0	\$0
Gain on sale of equity security	(\$4)	(\$0)	\$0	\$0	\$0
Provision for (benefit from) income taxes	(\$6)	(\$8)	(\$7)	(\$166)	(\$4)
Change in fair value of earn-out liability	\$2	\$5	\$7	\$7	(\$6)
Loss on fair value adjustment of derivatives, net	\$2	\$0	\$0	\$0	\$0
Loss on extinguishment of debt	\$17	\$0	\$0	\$0	\$0
Restructuring and other charges	\$0	\$0	\$0	\$9	\$0
Gain on divestiture	\$0	\$0	\$0	\$0	(\$91)
Impairment of assets	\$0	\$0	\$0	\$0	\$10
Non-GAAP Net Income	\$28	\$28	\$22	\$35	\$26
Operating Income in Millions	Q3 2022 (ASC 606)	Q4 2022 (ASC 606)	Q1 2023 (ASC 606)	Q2 2023 (ASC 606)	Q3 2023 (ASC 606)
GAAP Operating Income	\$17	\$16	\$2	\$12	\$105
Adjustments:					
Stock-based compensation	\$9	\$10	\$13	\$11	\$10
Acquisition-related/divestiture costs and retention bonus expense	\$2	\$1	\$1	\$0	\$0
Amortization of acquired intangible assets	\$4	\$4	\$4	\$4	\$4
Expense on abandoned operating leases	\$1	\$1	\$1	\$0	\$0
Change in fair value of earn-out liability	\$2	\$5	\$7	\$7	(\$6)
Restructuring and other charges	\$0	\$0	\$0	\$9	\$0
Gain on divestiture	\$0	\$0	\$0	\$0	(\$91)
Impairment of assets	\$0	\$0	\$0	\$0	\$10
Non-GAAP Operating Income	\$34	\$37	\$28	\$44	\$32
Depreciation	\$7	\$7	\$7	\$8	\$7
Adjusted EBITDA	\$41	\$44	\$35	\$52	\$39

* Tables exclude the following items which round to \$0M: Non-cash interest expense, Facility restoration costs, and Severance costs.

** Certain amounts may be off \$1.0M due to rounding.

Revenue and Licensing Billings

In Thousands	ASC 606					ASC 606			
	Q1'22	Q2'22	Q3'22	Q4'22	FY 2022	Q1'23	Q2'23	Q3'23	YTD 2023
Royalty Revenue	\$30,464	\$48,038	\$29,878	\$31,436	\$139,816	\$28,169	\$40,672	\$28,857	\$97,698
Product Revenue	\$47,969	\$53,302	\$58,619	\$67,178	\$227,068	\$63,775	\$54,978	\$52,181	\$170,934
Contract and Other Revenue	\$20,617	\$19,792	\$23,747	\$23,753	\$87,909	\$21,818	\$24,182	\$24,260	\$70,260
Total	\$99,050	\$121,132	\$112,244	\$122,367	\$454,793	\$113,762	\$119,832	\$105,298	\$338,892

In Thousands	Q1'22	Q2'22	Q3'22	Q4'22	FY 2022	Q1'23	Q2'23	Q3'23	YTD 2023
Royalty Revenue	\$30,464	\$48,038	\$29,878	\$31,436	\$139,816	\$28,169	\$40,672	\$28,857	\$97,698
Licensing Billings ¹	\$64,102	\$66,104	\$62,156	\$64,328	\$256,690	\$63,405	\$60,175	\$57,906	\$181,486
Delta	\$33,638	\$18,066	\$32,278	\$32,892	\$116,874	\$35,236	\$19,503	\$29,049	\$83,788

In Thousands	Q1'22	Q2'22	Q3'22	Q4'22	FY 2022	Q1'23	Q2'23	Q3'23	YTD 2023
ASC 606 Interest Income ²	\$1,827	\$1,455	\$1,248	\$1,029	\$5,559	\$919	\$627	\$426	\$1,972

¹ Licensing billings is an operational metric that reflects amounts invoiced to our patent and technology licensing customers during the period, as adjusted for certain differences relating to advanced payments for variable licensing agreements.

² Interest income associated with the significant financing component of licensing agreements as a result of the adoption of ASC 606.

GAAP to Non-GAAP Income Statement

In \$ Millions	GAAP Actual Q3'23	Non-GAAP Actual Q3'23	Delta to GAAP
Revenue	\$105.3	\$105.3	\$-
Cost of revenue	24.0	20.5	(3.5)
Research and development	37.4	34.2	(3.2)
Sales, general and administrative	25.6	18.2	(7.4)
Change in fair value of earn-out liability	(5.7)	0.0	5.7
Restructuring and other charges	(0.1)	0.0	0.1
Gain on divestiture	(90.8)	0.0	90.8
Impairment of assets	10.0	0.0	(10.0)
Total operating cost and expenses	0.4	72.9	(72.5)
Operating income	104.9	32.4	(72.5)
Interest and other income (expense), net	2.4	2.4	0.0
Income before income taxes	107.2	34.8	(72.5)
Provision for (benefit from) income taxes ¹	4.0	8.3	4.3
Net income	\$103.2	\$26.4	(\$76.8)

¹ Assumes a non-GAAP tax rate of 24%.

Certain amounts may be off \$0.1M due to rounding.

Product Overview



Industry-leading Chips and Silicon IP

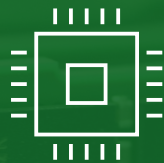
Chips

Providing memory bandwidth and capacity to unleash the power of CPUs and accelerators

Chips

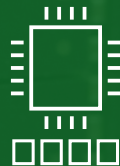
Silicon IP

Innovations



Memory Interface Chips

- DDR5 Server Chipset
- DDR4 Server Chipset



CXL Memory Initiative

DDR5 DIMM Chipset

Industry-leading Performance and Margin

- Compliant with latest JEDEC spec up to 6400 MT/s
- Wide margin IO design with advanced programmability
- Exceeds JEDEC reliability requirements

Optimized Power

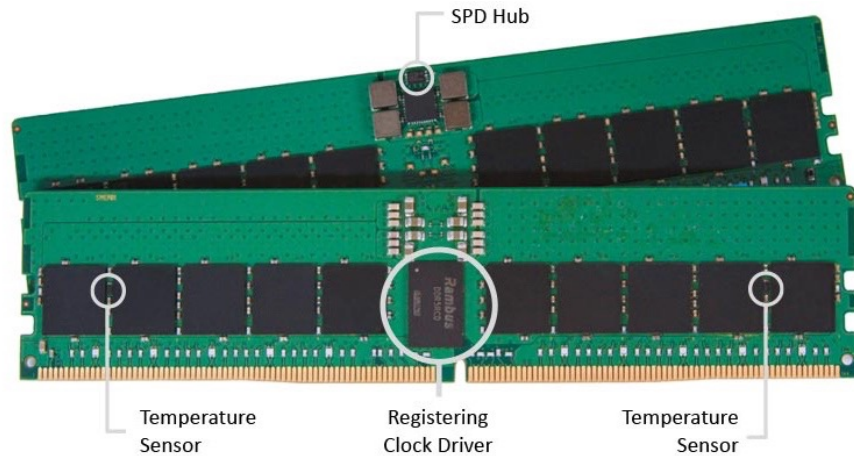
- Frequency-based power optimization

Best-in-class Debug and Serviceability

- Integrated tools for bring-up and debug
- Works out of the box with default system BIOS

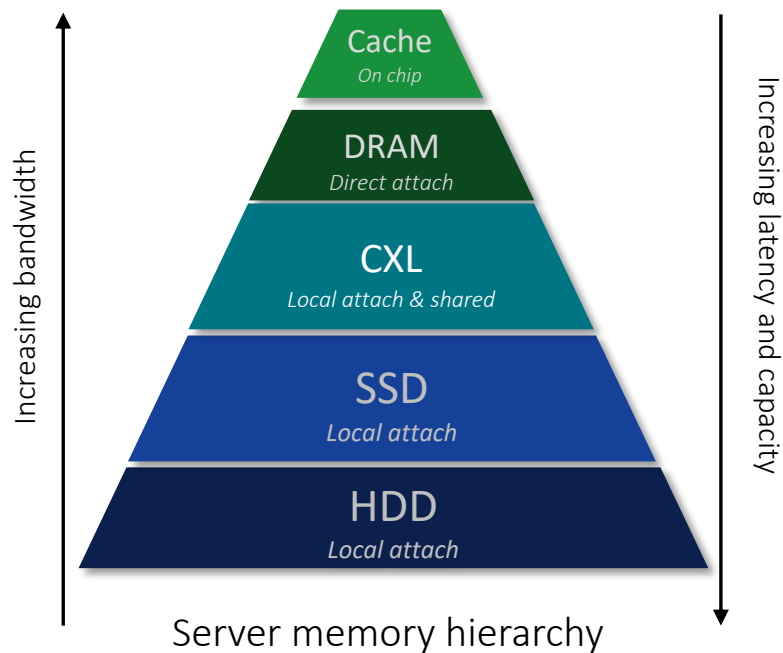
Use Cases

- Server (RCD, SPD Hub, Temp. Sensors): RDIMM, LRDIMM, NVDIMM
- Client (SPD Hub Only): UDIMM, SODIMM



DDR5 RDIMMs with Rambus Memory Interface chips: Registering Clock Driver, SPD Hub and Temperature Sensors

Bridging the Latency Gap with CXL



- Compute Express Link™ (CXL™) is a new interconnect standard with wide industry support
- Delivers memory cache coherency allowing memory resources to be shared between computing devices
- Enables a new tiered memory architecture that can bridge the latency and capacity gap

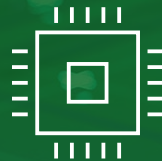
Silicon IP

Enabling accelerated computing
with high-performance interfaces
and hardware-level security

Chips

Silicon IP

Innovations



Interface IP






























- PCI Express
- CXL
- HBM
- GDDR






























































Security IP

- Root of Trust
- MACsec
- IPsec
- IME

Interface IP: Memory Interface and Interconnect IP

	Memory Controllers					Interconnect Controllers					Video Compression	
	DDR-Type			HBM		CXL		PCI Express		MIPI	VESA	FEC
Application Focus	DDR	LPDDR	GDDR	2/2E	3	2.0	3.0	5.0	6.0	CSI-2/ DSI-2	DSC/ VDC-M	DP/ HDMI
Data Center												
AI/Edge												
Automotive										 ★	 ★	 ★
Government & Defense												
IoT												
Availability	Now	Now	Now	Now	Now	Now	Roadmap	Now	Now	Now	Now	Now

Security IP: Protecting Data at Rest, in Motion, and in Use

	Root of Trust		Network Security		Cipher Engines	Crypto Cores		Provisioning	
Application Focus	Programmable	Firmware Controlled	MACsec	IPsec TLS	IME	Crypto	TRNG	Infrastructure	Key Management
Data Center	  	N/A				 	 		
AI/Edge	  	 				 	 		
Automotive	 		 	N/A					
Government & Defense	  					  	 		
IoT	N/A	 	N/A		N/A	 	 		
Availability	Now	Now	Now	Now	Now	Now	Now	Now	Now

Rambus Labs

Enabling next-generation data centers through innovation, research and development



Chips

Silicon IP

Innovations



Next-Gen Memory



Post-Quantum
Computing Security

Key Areas of Focus for Rambus Labs



Next-Gen Memory
Architectures and
Performance



Secure and Reliable
Memory Systems



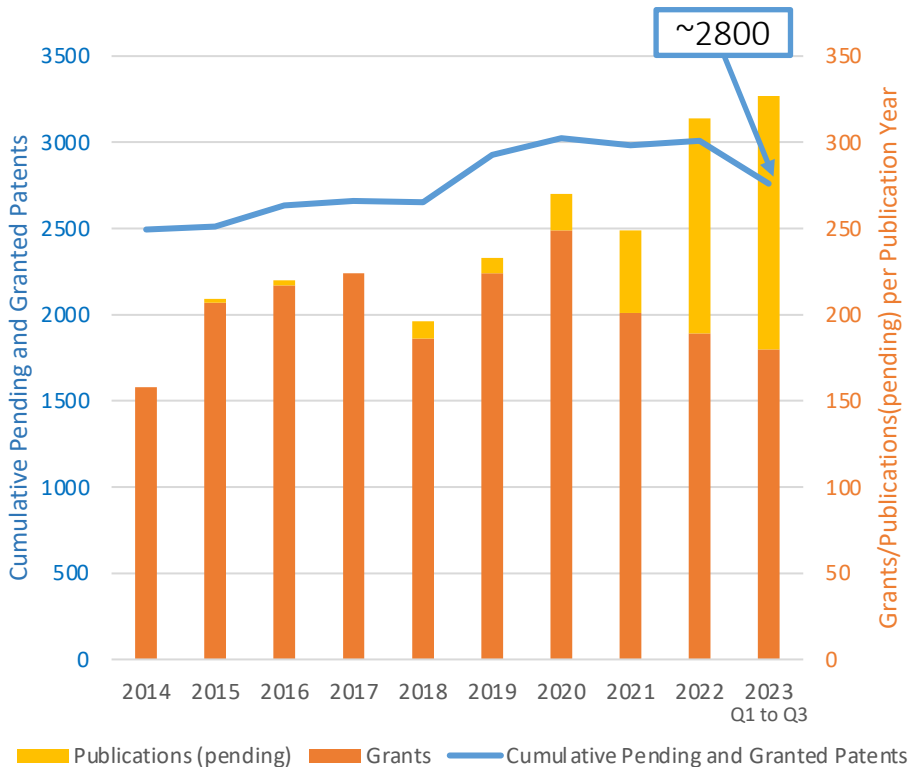
Security for AI/ML
and PQC



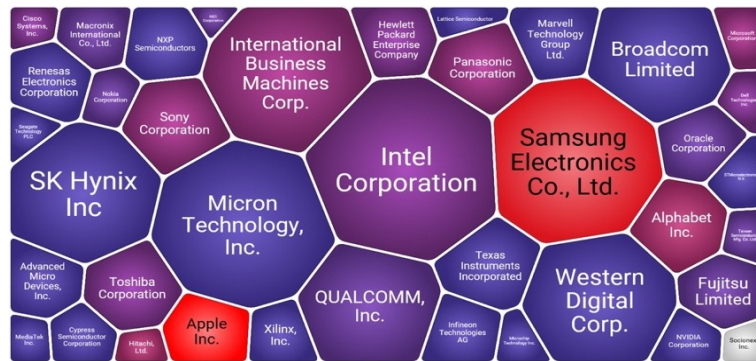
Strategic Customer &
Product Roadmap
Support

Innovating to Meet Market Needs

Rambus Patent Portfolio



Industry Recognition of Rambus Patents



Source: Innography, patent citations

- Fundamental R&D feeds product development
- Relevant portfolio regularly cited by major industry players
- Supports predictable licensing base and sustained cash generation

Thank you

